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Actuator technology successfully completes accelerated schedule

The test team at NASA's Stennis Space Center successfully completed an accelerated test schedule with the third and final test of a three-part test series of the Electro-Mechanical Actuator (EMA) technology used on the former X-33 program's XRS-2200 Linear Aerospike flight engine set. The test began at 7:58 p.m. Aug. 6 and ran for a full 90 seconds, reaching the planned maximum power of 85 percent.

The series was conducted as part of NASA's Second Generation Reusable Launch Vehicle Program – also known as the Space Launch Initiative.

Electro-mechanical actuators electronically regulate the amount of fuel and oxidizer flowing to the engine. The new technology is a potential alternative and improvement to the older pneumatic and hydraulic-fluid systems currently used by the aerospace industry to drive and control critical rocket engine valves.

"This was a very aggressive test schedule," NASA's Dr. Don Chenevert, EMA project manager at Stennis, said. "In less

See **EMA TEST** Page 7

Stennis Space Center conducted the final test Aug. 6 of a three-part test series of the Electro-Mechanical Actuator (EMA) used for the former X-33 program. The technol-ogy is being studied as part of NASA's Space Launch Initiative program.

Stennis, USDA help U.S. farmers better compete in world markets

The United States has the largest and most productive agricultural sector in the world, but skyrocketing production costs, low commodity prices and an overall high level of risk increasingly challenge American farmers. Stennis Space Center is taking a lead role in helping farmers meet these challenges.

To help American farmers better compete in the world market, NASA and the United States Department of Agriculture (USDA) started the Ag 20/20 program in 2000. The aim of Ag 20/20 is to utilize NASA research and technology to create tools that a farmer can use to more efficiently manage production, save money and help preserve the environment.

"The program demonstrated opportunities for significant savings for farmers with new fertilizer, herbicide and pesticide application techniques last year. This summer, the program is seeing even more positive results," Ag 20/20 Technical Manager Rodney McKellip from NASA's Earth Science Applications Directorate at Stennis, said.

The aim of Ag 20/20 is to utilize NASA research and technol-ogy to create more efficient farming methods.

Dr. Jay Hardwick's 7,200-acre cotton farming operation near Newellton, La., is the site of one Ag 20/20 project this year.

See **AG 20/20** Page 7

Sen. Stennis' 100th birthday recognized

Stennis Space Center owes not only its name but its very existence, in large part, to the diminutive statesman from Mississippi — John C. Stennis. This month, the senator would have been 100 years old.

The word "statesman" is the term that is most closely associated with this great American who began his career as a farmer from the gentle hills of Kemper County. From his roots there, he adopted a simple motto early in his political career that became his creed and the foundation for his steadfast devotion to honesty and hard work in every task he undertook: "I will plow a straight furrow right down to the end of the row."

Serving 41 years in the U.S. Senate, Stennis was known and recognized for his honesty and integrity.

Sen. Stennis' support of NASA led President Ronald Reagan in 1988 to rename the National Space Technology Laboratories the John C. Stennis Space Center. At the dedication ceremony, then Mississippi Governor Ray Mabus stated, "Senator Stennis has received many honors, but none more symbolic than this one. Throughout his career he has been a man of vision . . . who has helped guide this nation to new frontiers."

Sen. Stennis stood firm in support of NASA, holding town meetings in small Hancock County communities to encourage land owners to sell their land and bring Mississippi into the space age with the construction of what would one day be Stennis Space Center.

During a visit in 1978, Sen. Stennis said, "I have never forgotten the promises made that night in Logtown. I have kept foremost in my mind that the people of Hancock County willingly allowed over 40 percent of the land area of this county to become a federal installation. In return, the federal government assured the people of Hancock County and Mississippi that the facility would be used. As long as I have any say-so in this matter, that promise of the federal government will be met."

Sen. John C. Stennis speaks at the Aug. 3, 1988, dedication ceremony for the John C. Stennis Space Center, formerly National Space Technology Laboratories.

John Stennis retired from the Senate in 1988 and returned home to teach at Mississippi State University. On April 23, 1995, at the age of 93, former Sen. John C. Stennis passed away, leaving behind a remarkable legacy.

Stennis named principal center in design of Agency-wide geographic database tool

Stennis Space Center has been named principal center in the design and implementation of the first Environmental Geograph-ical Information System (EGIS) for NASA Headquarters in Washington, D.C., and its 13 field centers. The computer-based EGIS project provides information to effectively answer questions related to environmental management issues at each NASA center.

Following the Stennis model developed last year by the center's Environmental Office, the Stennis team over the past 18 months gathered cadastral/geodetic, hydrological, political and physical geographic data from public sources, as well as purchased information from such agencies as the Federal Emergency Management Agency and various private companies.

"Stennis is supplying a database with limited information layers," NASA's Hugh Carr of the Environmental Office at Stennis and technical lead on this project, said. "It is just a starting point that will assist NASA centers in better environmental

See **DATABASE** Page 7

NEWSCLIPS

Genesis set to catch a piece of the Sun — Launched Aug. 8, NASA's next robotic space explorer, Genesis, is expected to capture about 10 to 20 micrograms of the solar wind, made up of invisible charged particles expelled by the Sun.

The spacecraft carries scientific instruments designed to entrap solar wind particles. Sample collection will conclude in April 2004 when the spacecraft returns to Earth. Genesis, managed by NASA's Jet Propulsion Laboratory, Pasadena, Calif., will be the first mission to return a sample of extraterrestrial material collected beyond the orbit of the Moon.

Chandra detects halo of hot gas around Milky Way-like galaxy — The first evidence of a giant halo of hot gas around a spiral galaxy, much like the Milky Way, was recently found by astronomers using NASA's Chandra X-ray Observatory. This discovery may lead to a better understanding of our own galaxy, as well as the structure and evolution of galaxies in general.

These new results provide important clues about the cycling of energy and mass in a galaxy and about the evolutionary history of galaxies. NASA's Marshall Space Flight Center, Huntsville, Ala., manages the Chandra program.

Viking's anniversary recognized — NASA's Viking I Lander soft-landed on the surface of Mars 25 years ago, on July 20, 1976, becoming the first successful mission to land on the Red Planet, as well as the first successful American mission to land on another planet. The Viking project, managed by NASA's Langley Research Center, Hampton, Va., changed our understanding of the universe. President George W. Bush, recognizing the silver anniversary of Viking's exploration of Mars, said, "The exploration of Mars brings out the best in Americans. It challenges us to learn, to strive and to achieve dreams that were impossible for earlier generations."

Administrator Goldin appoints task force to review ISS program

NASA Administrator Daniel Goldin has named a diverse team of world-renowned experts, including two Nobel laureates and a world-famous heart surgeon, to the International Space Station (ISS) Management and Cost Evaluation (IMCE) Task Force.

"Since April, we've been working to select a team of outstanding innovators in the fields of science, engineering, finance and business to advise NASA and the administration how to maximize the scientific returns on the station, while living within the guidelines of the President's budget," Goldin said. He added, "The financial management of the International Space Station needs an overhaul, but we're going to do it in a way that doesn't sacrifice safety."

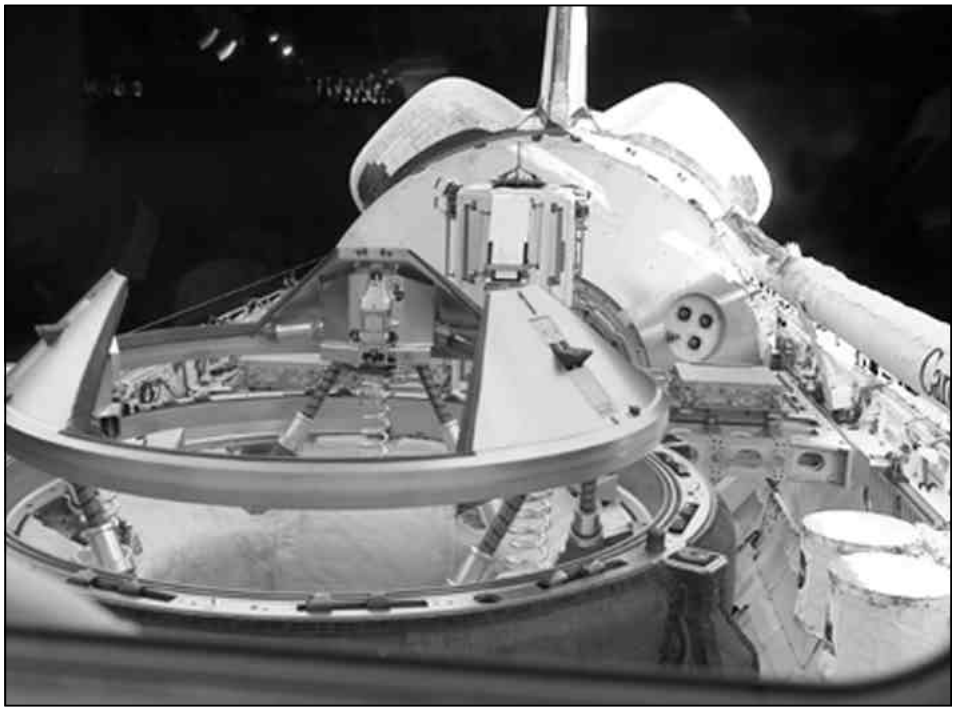
The task force will help NASA address recent cost growth on the program by assessing the quality of the International Space Station cost estimates, as well as program requirements, and identifying high-risk budget areas and potential risk mitigation strategies.

Goldin's appointees include Dr. Richard Roberts, a 1993 Nobel Prize winner in Physiology of Medicine; Dr. Robert Richardson, vice-provost for Research at Cornell University, Ithaca, N.Y., and a winner of the 1996 Nobel Prize for the discovery of superfluidity in the isotope helium-3 (3He); and Dr. Michael DeBakey, chancellor emeritus of Baylor College of Medicine, Waco, Texas.

"This panel has been empowered to leave no stone unturned. We have experts in all fields that have the capacity to dig deep to help us restructure the business and financial approach of this program," Goldin said. "The task force will identify opportunities for maximizing capability to meet priority research program needs within the planned budget."

Goldin also appointed Thomas Young as chair of the task force. Young, a former president at Martin Marietta Corp., recently led the Mars Program Indepen-dent Assessment Team which reviewed NASA's approach to robotic exploration.

The task force will report to the NASA Advisory Council Nov. 1.



One of the STS-105 crew members on the flight deck of the Earth-orbiting Space Shuttle Discovery, in preparation to link up with the International Space Station (ISS), used a digital still camera to record this image of the Orbiter Docking System's docking mechanism in the cargo bay. The shuttle's Canadarm or Remote Manipulator System arm is in its stowed position on the port side. The Space Shuttle Discovery, launched Aug. 10, 3:10 (CDT) delivered the Expedition Three crew to the ISS and will return the Expedition Two crew to Earth with a scheduled landing Aug. 21.

Bearing gifts

New residents move into space station

New residents arrived at the International Space Station (ISS) Aug. 13 following a flawless docking of Discovery to the orbital outpost to relieve a trio of space travelers. Commander Yury Usachev and Flight Engineers Jim Voss and Susan Helms wrapped up their 155th day in space at the time of Discovery's launch Aug. 10.

Discovery Commander Scott Horowitz, with the assistance of Pilot Rick Sturckow and Mission Specialists Pat Forrester and Dan Barry, carefully guided the shuttle to a linkup with the ISS at 1:42 p.m. (CDT) as the two craft sailed 240 miles above northwestern Australia. Onboard Discovery were the new Station Commander Frank Culbertson, and his Expedition Three crewmates, Pilot Vladimir Dezhurov and Flight Engineer Mikhail Tyurin.

At 3:41 p.m., hatches finally swung open between Discovery and the ISS, and the two crews greeted one another. Within minutes, all ten astronauts and cosmonauts had shared greetings before settling in for a station safety briefing conducted by Usachev, followed by the systematic process of handing over command of the station.

Two spacewalks are planned while Discovery is docked to the International Space Station. The first spacewalk will see Barry and Forrester install the Early Ammonia Servicer to the space station's P6 truss and the Materials ISS Experiment (MISSE) on handrails of the ISS airlock. During the second spacewalk, the two mission specialists will install handrails and lay cables to provide temporary power to the S0 truss to be launched on a future mission.

MsET gets $50,000 grant to support Pine Beetle detection through remote sensing

The Mississippi Enterprise for Technology (MsET) at NASA's Stennis Space Center has received a $50,000 grant from the USDA's Rural Business Opportunity Grant program for a forestry demonstration project in southwest Mississippi. The project is designed to show the effectiveness of using remote sensing for early detection of the destructive Southern Pine Beetle.

In executing the project, MsET will work with the Southwest Mississippi Planning & Development District; DataStar, Inc., Picayune and Global Positioning Solutions (GPS), Inc., Inverness. The companies will utilize remote sensing technologies originally developed through NASA at Stennis and will demonstrate an aerial survey system coupled with an advanced Internet-based Geographic Information System application that will identify, locate and alert timber owners of beetle infestations.

DataStar, Inc., located in the Enterprise Incubator Center at Stennis, will employ its DataStar Image Processing Exploitation, or DIPX — a mature, user-friendly, desktop and Internet application used to perform image processing and analysis and to manipulate remotely sensed imagery data.

DIPX is based on NASA's Space Technology Hall of Fame award-winning Earth Resources Laboratory Applications Software package (ELAS) developed at Stennis in the early 1980s. GPS, Inc. will conduct the aerial surveys by collecting data using a multispectral digital camera originally developed under a NASA Stennis-sponsored Small Business Innovation Research contract with Duncan Technologies, Inc., Auburn, Calif.

Based on research conducted by NASA's Dr. Gregory Carter of the Earth Science Applications Directorate at Stennis, the project will collect data by looking at specific bands, or colors of light, that compared against each other are the most sensitive in detecting how "green" a tree is. This method will allow for the detection of trees that are under attack by the Southern Pine Beetle even before the damage to the tree might be visible to the human eye.

The Mississippi Forestry Commission will assist the MsET by reviewing and evaluating the results of the project for its potential in aiding the commission in carrying out its annual Southern Pine Beetle surveys of private and public forested lands.

In addition, as the project progresses during the next year, MsET will conduct town meetings in various locations of southwest Mississippi to explain and demonstrate the results of the project to landowners, foresters and other interested parties.

This project is the result of the efforts of the MsET working with NASA's Office of Technology Transfer at Stennis and the Mississippi affiliate of NASA's Southeast Regional Technology Transfer Center.

MsET is a joint effort of NASA, the Mississippi Development Authority and Mississippi's universities.

MsET taps the scientific and technical assets of the state and NASA to stimulate new business growth in Mississippi.

Parsons returns to Stennis as director of center operations

William "Bill" Parsons

Late last month, Stennis Acting Director Mark Craig announced that William "Bill" Parsons, former Deputy Center Director at Johnson Space Center (JSC), Houston, assumed duties as Director, Center Operations and Support Directorate at Stennis July 29.

Parsons is a Mississippi native with a bachelor's degree in engineering from the University of Mississippi and a master's degree in engineering management from the University of Central Florida. He served in a number of positions at Kennedy Space Center from 1990 to 1997, before coming to Stennis as Chief, Operations Division, Propulsion Test Directorate. In 1998, Parsons joined JSC as Director, Center Operations Direct-orate before being named Deputy Center Director last year.

Parsons replaces Larry Ellis, who has assumed the post of Director, Space Station Hardware Integration Office and Acting Director of the International Space Station and Payload Processing Directorate at Kennedy Space Center.

Representatives from Stennis Space Center's Propulsion Test Directorate were among many exhibitors at the 37th American Institute of Aeronautics and Astronautics (AIAA) Joint Propulsion Conference and Exhibit held in Salt Lake City July 8-11. Pictured, from left, are NASA's Ben Powell, Lockheed Martin's Paula Taliancich, NASA's Gary Taylor, Kevin Power and Fred Patterson, Lockheed Martin's Vicki Ard, NASA's Kurt Shalkhauser (Plum Brook Station) and Lockheed Martin's Jim Smith.

Stennis wins 'Best of Show' in annual regional public relations competition

At the Southern Public Relations Federation (SPRF) Annual Awards banquet held July 20, NASA's Public Affairs Office at Stennis Space Center took top honors from four states — Mississippi, Louisiana, Alabama and the Florida Emerald Coast. Of the seven public affairs products and activities entered, NASA won seven prestigious awards including the coveted William A. Taylor Best of Show Award.

The Best of Show Award was presented to Stennis for the comprehensive and creative campaign to open StenniSphere, the space center's expanded visitor center.

The SPRF awards selection is very comprehensive and is conducted by a panel of accredited and certified judges in the public relations field. According to judges' comments, the Stennis Public Affairs entries "clearly led the field in creativity, professionalism and merit."

"All of us at Stennis are proud of this major accomplishment in an increasingly important field of work," Stennis Acting Director Mark Craig said. "This outstanding effort is an example of Stennis' commitment to placing emphasis and focusing energy on critically important activities to excite the public about America's Space Program."

Other winning entries included: Special Public Relations Program Lantern Award for the StenniSphere Opening Campaign; Media/Press Kits Lantern Award for the Environmental Cleanup Press Kit; External Video or Audio Programs Award of Excellence for the Stennis Space Center Overview Video; Special Purpose Publications Award of Excellence for the Stennis Space Center Mission Brochure; Special Events and Observances Award of Excellence for the Space Shuttle Main Engine Public Test Firing April 21, 2001; and Public Service Announcement Certificate of Achievement for the StenniSphere Television Public Service Announcements.

Stennis Space Center's Public Affairs team recently garnered seven regional awards from the Southern Public Relations Federation. The top award of the night, "Best of Show," went to Stennis for the campaign to open StenniSphere.

NASA recently completed its annual Savings Bond Drive at Stennis Space Center. Canvassers for the NASA Savings Bond Drive were: back row from left, Nancy Sullivan, Andrew Valente, Toni Watkins, Carolyn Kennedy and Carmen Ramirez; front row from left, Judy Cook, Diane Sims and Lynn Heberling. Thirty-one percent of NASA employees participated or renewed participation in the NASA/Stennis campaign.

NASA's Office of Technology Transfer Intellectual Property Manager John Bailey congratulates Dr. Robert Ryan of Lockheed Martin Space Operations, Stennis Programs on his recent patent application award for his invention of a radiant temperature nulling radiometer. The device is an infrared thermometer used for measuring the surface temperature of water bodies when calibrating infrared satellites.

Astro Camp Saturday kicks off new season in September

Stennis Space Center's popular Astro Camp Saturday at Stenni-Sphere will launch its fall program of monthly one-day camps beginning Saturday, Sept. 15 with its Star Station One™ program about the International Space Station (ISS).

As a new crew settles into the world's orbiting outpost 240 miles above the Earth, local youngsters back on Earth will have an opportunity to discover life on the ISS. Young scientists can learn about space careers onboard the space station and can tour a realistic mock-up of an ISS module at StenniSphere, the visitor center at Stennis.

Astro Camp Saturday is for children ages 9 to 12 and is scheduled from 9 a.m. to 4 p.m., one Saturday each month. The camps offer young people a variety of "space missions," including building and launching their own rockets in a "Rocketry 101" session and exploring the red planet on a "Mission to Mars."

The camp fee is $50 per camper and includes lunch from the RocKeTeria, snacks, all camp supplies and a ride on StenniSphere's motion simulator.

2001-2001 Schedule

Star Station One™ Sept. 15, 2001	Rocketry 101, Oct. 20, 2001	Mission to Mars Nov. 17, 2001
Star Station One, Dec. 15, 2001	Rocketry 101 Jan. 19, 2002	Mission to Mars, Feb. 16, 2002
Star Station One™ March 16, 2002	Rocketry 101 April 13, 2002	Mission to Mars, May 11, 2002

For more information or to register,
call 1-800-237-1821 (option 1) or (228) 688-2370 locally.

Andrew Zeringue, 14, and his younger brother Eric, 11, both of Pearlington, take control of the robotic arm in StenniSphere's exhibit on the International Space Station. Children ages 9 to 12 can discover more about life aboard the world's orbiting outpost in space at Astro Camp Saturday, Sept. 15 at StenniSphere.

Logicon-TASC, a wholly owned subsidiary of Northrop Grumman, recently dedicated their new local offices and Geospatial Production Facility at Stennis. Participating in ribbon cutting ceremonies were, from left, TASC Business Development Manager for the Advanced Mission Technologies Division George Berry; Technical/Deputy Director, Commander, Naval Meteorology and Oceanography Command Dr. Don Durham; TASC Program Development Manager Walt Smith; Director, TASC Advanced Mission Technologies Division Wayne Andrews; and Director, TASC Information and Geospatial Systems Division John Olesak. TASC primarily supports the Naval Oceanographics Office, NIMA and Ingalls Shipbuilding.

EMA TEST . . .

(Continued from Page 1)

than three months, the test team brought the engine back on line and prepared it for the three hot-fire tests which began with a 5.32-second start-sequence test July 12. We couldn't be more pleased with the program or the results."

With the XRS-2200 Linear Aerospike flight engine set already mounted on the A-1 test stand when funding for the X-33 program was discontinued in March, testing of the EMA technology was a timely opportunity for NASA to effectively gain valuable experience and data from existing commercial technology.

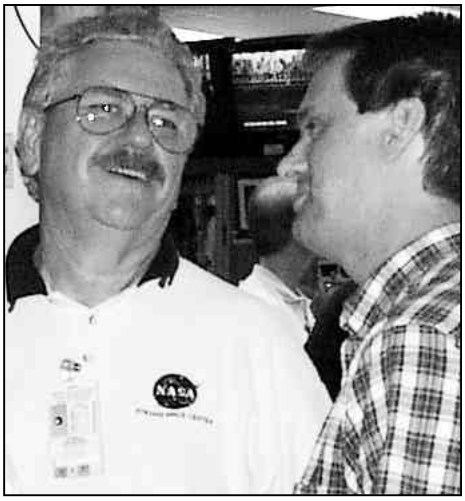
The Space Launch Initiative program is led by NASA's Marshall Space Flight Center, Huntsville, Ala. This technology development program is designed to increase safety and reliability while reducing costs for space travel.

"Because every engine proposed by industry for a second generation vehicle has EMAs, we took advantage of these aerospike engines already in position on the test stand to explore this relatively new technology now – saving us valuable time later," said Garry Lyles, Propulsion Projects Office manager of the Second Generation Reusable Launch Vehicle Program at Marshall.

Engineers are performing engine post-test inspections, and early indications are that all test objectives have been met, Chenevert said.

"The test series was an outstanding effort on everyone's part," Brian Sproles, The Boeing Company's X-33 Program Test Team manager at Stennis, said. "Working together under the limitations of time and resources, our test team conducted an outstanding program."

The Rocketdyne Propulsion and Power Unit of The Boeing Company in Canoga Park, Calif., developed the aerospike engine and supported the engine tests at Stennis.



NASA's Dr. Don Chenevert, EMA project manager, left, and Brian Sproles, The Boeing Company's X-33 Program Test Team manager, congratulate one another on the successful conclusion to a very aggressive test schedule.

AG 20/20 . . .

(Continued from Page 1)

NASA researchers are teaming with the Institute for Technical Development — Spectral Visions (ITD) at Stennis and Louisiana State University (LSU) to use digital photographs taken from an airplane or satellite to determine where in a field the farmer needs to apply such things as pesticides or plant growth regulators.

ITD develops remote sensing and geographic information systems applications, primarily for agriculture, to support NASA's Earth Sciences Applications Directorate group. The images are used to create a color vegetation index map that separates the field into several categories of vegetation health.

"This is the crucial step in the project," McKellip said. "Damaging insects are first drawn to the most healthy areas of a cotton field. By knowing where these harmful pests are most likely to be, we are better able to prescribe a cost-efficient treatment that applies pesticides only to at-risk areas of the field. In addition to saving the farmer money, using less pesticide to control bugs in cotton has the added benefit of less impact on the environment."

Technicians, scientists and students from LSU working on the ground utilize the NASA imagery. Using hand-held computer systems similar to many of today's personal data assistants, downloaded images are matched with GPS data to give their exact location on the farmland grid. The LSU researchers offer entomological expertise to determine what areas of the research fields need to be sprayed after scouting a number of locations in the fields. The technicians then transmit insect infestation data back to Stennis.

The researchers work with the farmer and his consultants to determine an exact insecticide prescription to apply — one that adequately controls the insect pressures while saving the farmer money on labor and chemicals. In similar tests last year, this "precision" approach to pesticide application for cotton was shown to be 22 percent less costly than the traditional whole-field application. That savings is significant, since insecticides represent one of the largest variable costs for a cotton farmer.

The Ag 20/20 program is involved with other projects beyond the fields of the Hardwick farm. Corn, cotton, soybean and wheat growers in the West, Midwest and Southeast are currently involved in projects addressing other priority issues in commodity production. NASA and the USDA remain committed as a team to work together toward the benefit of American agriculture.

As the program methods mature, and U.S. farmers continue to compete in the world market, the Ag 20/20 program may well prove a defining edge for future American farming viability in the global economy.

DATABASE . . .

(Continued from Page 2)

planning in areas such as compliance, environmental justice issues, and planning and inspection purposes."

As the scope of the project expands, Stennis plans to add additional data layers that will include satellite imagery as well as facilities and engineering information that should give centers even greater analysis capability.

"We will also be looking into Web-based access to our collective database of all NASA centers for use by NASA Headquarters," Carr said.

Stennis relied on Lockheed Martin Space Operations, Stennis Programs for project support.

"The scope of the information available to NASA from one source is incredible," Lockheed Martin's James 'Doc' Smoot, project coordinator, said. "In the past, a center might spend an untold amount of time referencing data from several dozen sources just to get part of the information readily available now with the database."

The data for each center was organized into overlay categories that would allow NASA to not only assess environmental impacts at individual centers, but also use the information to make comparative assessments across the Agency.

Safety Corner

Techniques for avoiding 'desk rage'

You've heard of road rage and air rage, but what about desk rage? From downsizing and economic insecurity, to non-stop communications technologies such as e-mail and cell phones, today's workplace is filled with opportunities to take on too much responsibility and become mired in stress.

Many workers today feel trapped and driven to work long hours, skip vacations and keep quiet about heavy workloads to show their commitment.

Signs of too much stress include increased irritability and anxiety, frequent illness-related work absences, decreased morale, and sleep and eating pattern changes. If you feel that your stress may be getting out of control, try the following suggestions:

- Don't allow your job to overshadow your life.
- Make time for a social life.
- Take a break!
- Take care of your body.
- Talk to your supervisor.
- Take advantage of company-sponsored counseling services.

Finally, if you find that these suggestions don't help, and you continue to feel unhappy and drained, seek professional help. A counselor may be able to help you gain control and get your life back to normal order.

QUICK LOOK

■ **NASA's Employee Appreciation Ice Cream Social** previously scheduled Wednesday, Aug. 22 in the Atrium of Building 1100 has been postponed. The new date is set for Sept. 6. The event is open to NASA employees.

■ **The Site-wide Federal Women's Program Committee** will present Angela Phillips Diaz, director, Human Space Flight and Research Division, Office of External Relations, NASA Headquarters, as guest speaker at the Women's Equality Day program Aug. 29 in the StenniSphere auditorium.

■ **The United States Military Veterans Organization** of Stennis Space Center will conduct their observation of the National POW/MIA Recognition Day Sept. 21 in front of the flag poles of Building 1100 beginning at 11 a.m. James Caire, MSgt, USAF (Retired), will be the guest speaker. The 159th Fighter Wing will fly the Missing Man Formation overhead with F-15 aircraft from Naval Air Station New Orleans in Belle Chasse, La. For more information, contact Lee Cuny at Ext. 8-3607.

■ **The 2001 Combined Federal Campaign, "Giving Makes Great Things Happen"** will kick off Sept. 26 beginning at 10 a.m. in the StenniSphere auditorium. Bob Breck, chief meteorologist for WVUE-TV Fox 8, New Orleans will be guest speaker.

■ **USM-Gulf Coast will conduct a Cryogenic Propulsion Systems Design course** Sept. 26-27 from 8 a.m. until 4:30 p.m. each day in the Conference Center. Continuing Education Units will be awarded through USM. Additionally, a course in Frontline Supervisory Training is scheduled Sept. 12 and Franklin Covey's What Matters Most Seminar is set Oct. 25. To register for any of these courses, call (228) 867-8777 or fax to (228) 867-8775.

■ **NASA Honor Award ceremonies** are scheduled Sept. 28 beginning at 1:30 p.m. in the StenniSphere auditorium. Former Stennis Space Center Director and current Johnson Space Center Acting Director Roy Estess will be guest speaker.

■ **The Center of Higher Learning's Fall 2001 schedule** of courses is available in Microsoft Word format at *ftp://ftp.ssc.usm.edu/pub/users/klong/Fall.2001.schedule.doc.* For additional information, call Ext. 8-7662.

LAGNIAPPE

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